Lampiran 1

Tabel 14. Daftar Hasil Tes Kekuatan Otot Tungkai, Keseimbangan Dan Kecepatan Tendangan Ushiro Mawashi Geri

No	Kekuatan (X_1)	Keseimbangan (X_2)	Kecepatan Tendangan Ushiro Mawashi Geri (Y)
1	15	2.43	1.04
2	18	2.12	1.02
3	17	4.05	1.44
4	20	2.18	1.23
5	15	4.01	1.27
6	22	5.08	1.06
7	23	2.12	1.01
8	19	3.39	1.04
9	18	2.18	1.16
10	15	1.56	1.27
11	17	3.39	1.06
12	20	2.12	1.47
13	12	2.18	1.04
14	19	3.42	0.97
15	20	2.12	1.02
Jumlah	**270**	**42.35**	**17.1**

Lampiran 2

Tabel 15. Daftar Hasil Tes Kekuatan, Keseimbangan Dan Kecepatan Tendangan Ushiro Mawashi Geri

No	Kekuatan Otot Tungkai (X_1)	Keseimbangan (X_2)	Kecepatan Tendangan Ushiro Mawashi Geri (Y)	X_{1^2}	X_{2^2}	Y^2
1	15	2.43	1.04	225	5.904	1.0816
2	18	2.12	1.02	324	4.494	1.0404
3	17	4.05	1.44	289	16.402	2.0736
4	20	2.18	1.23	400	4.752	1.5129
5	15	4.01	1.27	225	16.08	1.6129
6	22	5.08	1.06	484	25.806	1.1216
7	23	2.12	1.01	529	4.494	1.0201
8	19	3.39	1.04	361	11.492	1.0816
9	18	2.18	1.16	324	4.752	1.3456
10	15	1.56	1.27	225	2.433	1.6129
11	17	3.39	1.06	289	11.492	1.1236
12	20	2.12	1.47	400	4.494	2.1609
13	12	2.18	1.04	144	4.752	1.0816
14	19	3.42	0.97	361	11.696	0.9409
15	20	2.12	1.02	400	4.494	1.0404
Jumlah	**270**	**42.35**	**17.1**	**4980**	**133.537**	**19.8506**

Lampiran 3

Langkah-langkah perhitungan

Perhitungan T skor hasil pengukuran kekuatan otot tungkai, keseimbangan dan kecepatan tendangan ushiro mawashi geri. Rumus :

T skor = $50 \pm 10 \frac{(X - \bar{X})}{SD}$

Langkah-langkah perhitungan

A. Menghitung rata-rata dan kesimpangan baku dan varians

a. Variable kekuatan otot tungkai (X_1)

Diketahui : $\sum X_1$ = 750

$\sum X_{1^2}$ = 38900

n = 15

1. Rata-rata X^1 = $\frac{\sum X^1}{n}$

= $\frac{750}{15}$

= 50

2. Simpang Baku = $\sqrt{\frac{n \sum x_{1^2} - (\sum X_1)^2}{n(n-1)}}$

= $\sqrt{\frac{15.38900 - (750)^2}{15(15-1)}}$

= 10

3. Varians = 100

b. Variable Keseimbangan (X_2)

Diketahui : $\sum X_2$ = 750

$\sum X_{2^2}$ = 38900

n = 15

1. Rata-rata X^2 $= \frac{\sum X_2}{n}$

$= \frac{750}{15}$

= 50

2. Simpang Baku $= \sqrt{\frac{n\sum x_{2^2} - (\sum X_2)^2}{n(n-1)}}$

$= \sqrt{\frac{15.38.900-(750)^2}{15(15-1)}}$

= 10

3. Varians = 100

c. Variable Kecepatan tendangan ushiro mawashi geri (Y)

Diketahui : $\sum Y$ = 750

$\sum Y$ = 38.900

n = 15

1. Rata-rata Y $= \frac{\sum Y}{n}$

$= \frac{750}{15}$

= 50

2. Simpang Baku $= \sqrt{\frac{n\sum Y - (\sum Y)^2}{n(n-1)}}$

$$= \sqrt{\frac{15.38.900-(750)^2}{15(15-1)}}$$

= 10

3. Varians = 100

B. Menentukan T skor

Contoh : n ke-1 dari X_1

T skor = $50+10\frac{(15-18}{2,82}$

= 50+10 (-1,06)

=50 + (-10,63)

=39,36

Contoh : n ke-1 dari X_2

T skor = $50+10\ \frac{(\ 2,43-2,82}{0.965}$

= 50+10 (-0,40)

=50+(-4,04)

=45,95

Contoh : n ke-1 dari Y

Tskor = $50+10\ \frac{(\ 1,04-1,14}{0,159}$

= 50+10 (-0,64)

= 50+ (-6,49)

= 43,50

Lampiran 4

Tabel 16. Data Mentah Yang Telah Di Rubah Dalam T Skor

No	Kekuatan Otot Tungkai		Keseimbangan		Kecepatan Tendangan Ushiro Mawashi Geri	
	DATA	T SKOR	DATA	T SKOR	DATA	T SKOR
1	15	39.36	2.43	45.95	1.04	43.5
2	18	50	2.12	42.74	1.02	42.2
3	17	46.45	4.05	62.74	1.44	69.48
4	20	57.09	2.18	43.36	1.23	55.84
5	15	39.36	4.01	62.33	1.27	58.44
6	22	64.18	5.08	72.79	1.06	44.8
7	23	67.73	2.12	42.74	1.01	41.55
8	19	53.54	3.39	55.9	1.04	43.5
9	18	50	2.18	43.36	1.16	51.29
10	15	39.36	1.56	36.94	1.27	58.44
11	17	46.45	3.39	55.9	1.06	44.8
12	20	57.09	2.12	42.74	1.47	71.42
13	12	28.72	2.18	43.36	1.04	43.5
14	19	53.54	3.42	56.21	0.97	38.96
15	20	57.09	2.12	42.74	1.02	42.2

Lampiran 5

Tabel. Data persiapan untuk perhitungan regresi dan korelasi

No	X_1	X_2	Y	X_{1^2}	X_{2^2}	Y^2	X_1Y	X_2Y	$X_1 X_2$
1	39.36	45.95	43.5	1549.2	2111.4	1892.25	1712.16	1998.825	1808.592
2	50	42.74	42.2	2500	1826.7	1780.84	2110	1803.628	2137
3	46.45	62.74	69.48	2157.6	3936.3	4827.47	3227.346	4359.1752	2914.273
4	57.09	43.36	55.84	3256.98	1880.08	3118.1	3187.9056	2421.2224	2475.4224
5	39.36	62.33	58.44	1549.2	3885.02	3415.23	2300.1984	3642.5652	2453.3088
6	64.18	72.79	44.8	4119.07	5298.38	2007.04	2875.264	3260.992	4671.6622
7	67.73	42.74	41.55	4587.35	1826.7	1726.4	2814.1815	1775.847	2894.7802
8	53.54	55.9	43.5	2866.53	3124.81	1892.25	2328.99	2431.65	2992.886
9	50	43.36	51.29	2500	1880.08	2630.66	2564.5	2223.9344	2168
10	39.36	36.94	58.44	1549.2	1364.56	3415.23	2300.1984	2158.7736	1453.9584
11	46.45	55.9	44.8	2157.6	3124.81	2007.04	2080.96	2504.32	2596.555
12	57.09	42.74	71.42	3256.98	1826.7	5100.81	4077.3678	3052.4908	2440.0266
13	28.72	43.36	43.5	824.83	1880.08	1892.25	1249.32	1886.16	1245.2992
14	53.54	56.21	38.96	2866.53	3159.56	1517.88	2085.9184	2189.9416	3009.4834
15	57.09	42.74	42.2	3256.98	1826.7	1780.84	2409.198	1803.628	2440.0266
JUMLAH	**750.00**	**750.00**	**750.00**	**38900.00**	**38900.00**	**38900.00**	**375000.00**	**376000.00**	**37700.00**

Lampiran 6

Mencari persamaan regresi

1. Regresi Y atas X_1

Diketahui : $\sum X_1$ = 750 $\sum Y^2$ = 38900

$\sum X_{1^2}$ = 38900 $\sum X_1$Y = 375000

$\sum Y$ = 750

a $= \frac{(\sum Y)(\sum X_{1^2})-(\sum X_1)\sum X_1 Y}{n(\sum X_{1^2})-(X_1)^2}$

$= \frac{(750)(38900)-(750)(375000)}{15(38900)-(562.00)}$

$= \frac{29.175.000 - 281.250.000}{583.500 - (562.00)}$

$= \frac{252.075.000}{21.000}$

=12,003

b $= \frac{n(\sum X_1 Y)-(\sum X_1)(\sum Y)}{n(\sum X_{1^2})-(X_1)^2}$

$= \frac{15\ (375000) - (750)(750)}{15\ (38900) - 562500}$

$= \frac{5625000-562500}{583500-562500}$

$= \frac{5062500}{21000}$

= 241,07

Jadi persamaan regresi Y terhadap X_1 adalah Y = 12,003 + 241,07

2. Regresi Y atas X_2

Diketahui : $\sum X_2$ = 750 $\sum Y^2$ = 38900

$\sum X_{2^2}$ = 38900 $\sum X_1$Y = 375000

$\sum Y$ = 750 n = 15

a $= \frac{(\sum Y)(\sum X_{2^2})-(\sum X_2)\sum X_2 Y}{n(\sum X_{2^2})-(X_2)^2}$

$= \frac{(750)(38900)-(750)(376000)}{15(38900)-(562.00)}$

$= \frac{29.175.000 - 282.000.000}{21000}$

= 5,049

b $= \frac{n(\sum X_2 Y)-(\sum X_2)(\sum Y)}{n(\sum X_2)-(X_2)^2}$

$= \frac{15(376000) - (750)(750)}{15(38900) - 562500}$

$= \frac{5640000-562500}{21000}$

$= \frac{5077500}{21000}$

= 241,78

Jadi persamaan regresi Y terhadap X_2 adalah Y = 5,049 + 241,78 X_2

3. Regresi ganda Y atas X_1 dan X_2

Dicari dengan rumus sebagai berikut.

$b_0 = \bar{Y} - b_0 \bar{X}_1 - b_2 \bar{X}\_2$

$b_1 = \frac{(\sum X_{2^2})(\sum X_1 Y) - (\sum X_1 X_2)(\sum X_2 Y)}{(\sum X_{1^2})(\sum X_{2^2}) - (\sum X_1 X_2)}$

$b_2 = \frac{(\sum X_{1^2})(\sum X_1 Y) - (\sum X_1 X_2)(\sum X_1 Y)}{(\sum X_{1^2})(\sum X_{2^2}) - (\sum X_1 X_2)}$

Dimana :

$\sum Y^2 = \sum Y^2 - \frac{(\sum Y)^2}{n}$

$\sum X_{1^2} = \sum X_{1^2} - \frac{(\sum X_1)^2}{n}$

$\sum X_{1^2} = \sum X_{1^2} - \frac{(\sum X_2)^2}{n}$

$\sum X_1 Y = \sum X_1 Y - \frac{(\sum X_1)(\sum Y)}{n}$

$\sum X_1 Y = \sum X_1 Y - \frac{(\sum X_2)(\sum Y)}{n}$

$(\sum X X_2) = (\sum X_1 X_2) - \frac{(\sum X_1)(\sum X_2)}{n}$

Diketahui :

X_1=750	$\sum X_{1^2}$= 38900	$\sum X_1 Y$= 375000
X_2= 750	$\sum X_{2^2}$= 38900	$\sum X_2 Y$= 376000
Y = 750	$\sum Y^2$ = 38900	$\sum X_1 X_2$= 377000

Jadi :

$\sum Y^2$ $= \sum Y^2 - \frac{(\sum Y)^2}{n}$

$= 38900{,}00 - \frac{(750)^2}{15}$

$= 1.400$

$\sum X_{1^2}$ $= \sum X_{1^2} - \frac{(\sum X_1)^2}{n}$

$= 38900{,}00 - \frac{(750)^2}{15}$

$= 1.400$

$\sum X_{2^2}$ $= \sum X_{2^2} - \frac{(\sum X_2)^2}{n}$

$= 38900{,}00 - \frac{(750)^2}{15}$

$= 1.400$

$\sum X_1 Y$ $= \sum X_1 Y - \frac{(\sum X_1)(\sum Y)}{n}$

$= 375000 - \frac{(750)^2}{15}$

$= 337500$

$\sum X_2 Y$ $= \sum X_2 Y - \frac{(\sum X_2)(\sum Y)}{n}$

$= 376000 - \frac{(750)^2}{15}$

$= 338500$

$(\sum X_1 X_2)$ $= (\sum X_1 X_2) - \frac{(\sum X_1)(\sum X_2)}{n}$

$= 377000 - \frac{(750)^2}{15}$

$= 339500$

$$b_1 = \frac{\left(\sum X_{2^2}\right)(\sum X_1 Y) - (\sum X_1 X_2)(\sum X_2 Y)}{\left(\sum X_{1^2}\right)\left(\sum X_{2^2}\right) - (\sum X_1 X_2)^2}$$

$$= \frac{(1400)(337500) - (339500)(338500)}{(1400)(1400) - (339500)^2}$$

$$= \frac{472500.000 - 114920.000}{1960000 - 115260.250}$$

$$= \frac{375579.000}{198.988}$$

$$= 1{,}887$$

$$b_2 = \frac{\left(\sum X_{1^2}\right)(\sum X_2 Y) - (\sum X_1 X_2)(\sum X_1 Y)}{\left(\sum X_{1^2}\right)\left(\sum X_{2^2}\right) - (\sum X_1 X_2)^2}$$

$$= \frac{(1400)(338500) - (339500)(337500)}{(1400)(1400) - (339500)^2}$$

$$= \frac{473900 - 114581}{198.988}$$

$$= 1{,}805$$

$$b_0 = \bar{Y} - b_0 \bar{X}_1 - b_0 \bar{X}_2$$

$$= 50 - (1{,}887)(50) - (1{,}805)(50)$$

$$= 50 - (94{,}35 - 90{,}25)$$

$$= 45{,}90$$

Jadi persamaan regresi ganda Y atas X_1 dan X_2 adalah Y = 45,90 + 1,805 X_1 + 1,887 X_2

Lampiran 7

Mencari koefisien korelasi dan uji keberartian koefisien korelasi

1. Koefisien Korelasi ry_1

r $= \frac{n(\sum X_1 Y)-(\sum X_1)(\sum Y)}{\sqrt{[n(\sum X_{1^2})(\sum X_1)^2.\ n(\sum Y^2)-(\sum Y)^2]}}$

$= \frac{15(375000)-(750)(750)}{\sqrt{[15(38900)(750)^2.\ 15(38900)(750)^2]}}$

$= \frac{564000-562500}{\sqrt{[21000x\ 21000]}}$

$= \frac{1500}{21000}$

= 0,714

2. Uji keberartian koefisien korelasi

t $= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$

$= \frac{0,714\sqrt{15-2}}{\sqrt{1-0,714^2}}$

$= \frac{0,714x\ 3,611}{0,549}$

8,887

tabel dk = n-2

= 15 – 2

= 13

t_{tabel} = dk : 1 - $\frac{1}{2}a$

= 13 : 1 - $\frac{1}{2}$ 0,05

= 13 : 1 – 0,025

= 13 : 0,975

= 1,333

Berarti :

t_{tabel} dengan a = 0,05 dan dk = 13 diperoleh tabel sebesar 1,333 karena t_{hitung} = 8,887 > t_{tabel}= 1,333 dengan demikian kita terima Ho berarti koefisien korelasi 0,714 adalah signifikan.

3. Koefisien Korelasi ry_1

r = $\frac{n(\sum X_2 Y)-(\sum X_2)(\sum Y)}{\sqrt{[n(\sum X_{2^2})(\sum X_2)^2.\ n(\sum Y^2)-(\sum Y)^2]}}$

= $\frac{15(376000)-562500}{\sqrt{[15(38900)562500.\ 15(38900)562500]}}$

= $\frac{564150-562500}{\sqrt{[21000\,x\,21000]}}$

= $\frac{750}{21000}$

= 0,357

4. Uji keberartian koefisien korelasi

t = $\frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$

= $\frac{0,357\sqrt{15-2}}{\sqrt{1-0,357^2}}$

$= \frac{0,357\ x\ 3,611}{1-0,687}$

$= \frac{1,289}{\sqrt{0,873}}$

$= \frac{1,289}{1,746}$

= 1,385

tabel dk = n-2

= 15 – 2

= 13

t_{tabel} = dk : 1 - $\frac{1}{2}a$

= 13 : 1 - $\frac{1}{2}$ 0,05

= 13 : 1 – 0,025

= 13 : 0,975

= 1,333

Berarti :

t_{tabel} dengan a = 0,05 dan dk = 15 diperoleh tabel sebesar 1,333 karena t_{hitung} = 1,385 > t_{tabel} 1,333 dengan demikian diterima Ho berarti koefisien korelasi 0,357 adalah signifikan.

5. Mencari ry_{1-2} (koefisien korelasi ganda)

Jk (Reg)= $b_1 \sum X_1 Y + b_2 \sum X_2 Y$

= 1,887 (337500) + 1,805 (338500)

= 636.8625 + 610.9924

= 1247,855

R $= \frac{\sqrt{Jk\,(Reg)}}{\sum Y^2}$

$= \frac{\sqrt{1247,855}}{38900}$

$= \sqrt{3,207}$

= 6,441

6. Uji keberartian koefisien korelasi ganda

FH $= \frac{R^2 / K}{(1-R^2)/\, n-K-1}$

$= \frac{(6,441)^2 / 2}{(1-(6,441)^2)/\, 15-2-1}$

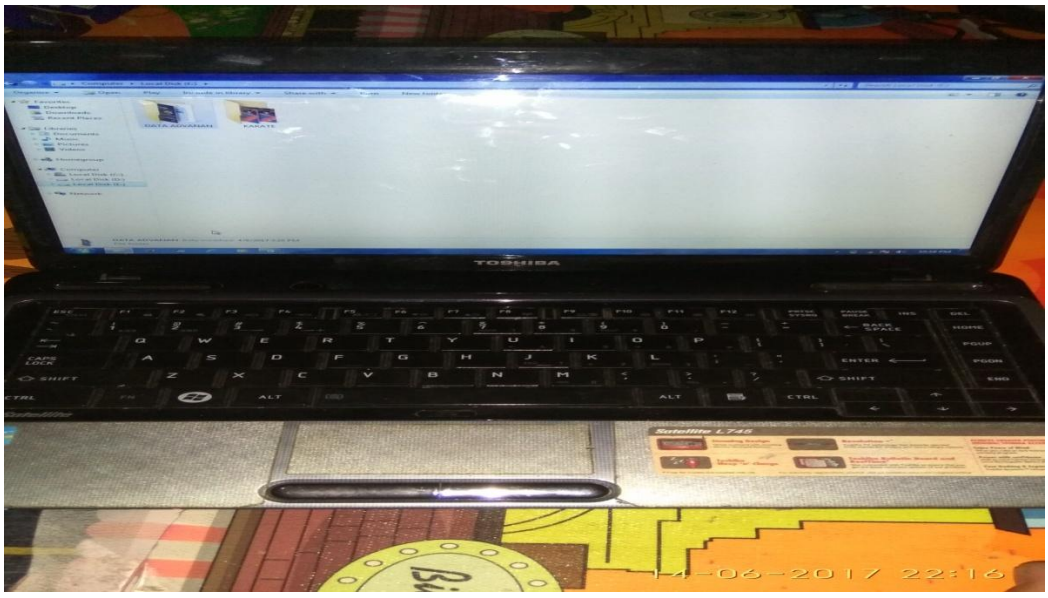
$= \frac{20,743}{3,373}$

= 6,149

F_{tabel} dicari dengan cara melihat daftar distribusi F dengan cacah predictor = 2 sebagai pembilang dan (n-k-1) = 12 sebagai penyebut didapat F_{hitung}= 6,149 > F_{tabel} 3,12 , maka koefisien korelasi ganda ry_{1-2} adalaha signifikan.

Gambar 18. Peserta Tes Penelitian

Sumber : foto penelitian (Bekasi, 20, Juni 2017 pukul 17:00 WIB)



Gambar 19. Laptop Untuk mengolah video kedalam Aplikasi Kinovea

Sumber : foto penelitian (Bekasi, 20, Juni 2017 pukul 16:10 WIB)